

Amendment
Application No. 10/719,020
Attorney Docket No. 032130

REMARKS

Claims 20 and 22-26 are pending in this application. Claims 27 and 29-31 have been cancelled in this Response. No amendment has been made in this Response.

(1) Claims 20, 23-25, 27 and 29 were rejected under 35 U.S.C. §102(b) as being anticipated by Atobe (JP 59-50190).

In Section 14 of the outstanding Office Action, the Examiner states that Applicant has not defined “copper foil” in a manner that precludes encompassing a brass plate. The Examiner seems to construe that the “brass” disclosed by Atobe in Example 1 meets the claimed “copper foil.”

However, the specification at page 11, lines 12-13 describes copper foil and copper alloy film, and claim 20 recites only a copper foil. This claim recitation means the Applicants excludes a copper alloy film from the claim. The brass plate of Atobe, even if Atobe discloses it, is made of a copper alloy, not made of copper. Thus, the brass plate of Atobe is not a “copper foil” as recited in claim 20. The rejection of claim 20 under 35 U.S.C. §102(b) is not supported by Atobe (JP 59-50190).

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(2) Claims 20, 22-27 and 29-31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rice et al. (U.S. Patent No. 4,888,574) in view of Kazonovtse et al.

(i) In response to the Applicants' argument that the present invention exhibits unexpected results, the Examiner states that the Applicants' argument is not persuasive since the improved appearance is attributed to different plating solution flow patterns which are not claimed. The Examiner points out the first line of page 19 of the specification, and states that applicant has not demonstrated that these *different solution flow patterns* necessarily arise from the claimed plating bath solution composition. Section 13 of the outstanding Office Action.

In this respect, the Examiner seems to misunderstand the description of the specification. The specification at page 19, line 1 describes that Comparative Examples 1 and 2 had poor appearance that they had stripe patterns along the flow direction of the plating solution. This description does not mean that the comparative examples were treated by "different solution flow patterns" different from the procedures used for Examples 1-5. As clearly understood by comparison of the description, Examples 1-5 and Comparative Examples 1-4 were treated by the same procedures as described at page 13, lines 14 to page 17, line 8; and the declaration under 37CFR§ 1.132 filed on March 10, 2006. The Examiner is requested to look into page 16, line 8 and page 17, lines 1-2 of the specification; and pages 2 to 3 of the declaration under 37CFR§ 1.132 filed on March 10, 2006.

(ii) The Applicants believe that the claimed method shows unexpected results over the cited references. The results of the Examples described in the specification and the declaration under 37CFR§ 1.132 filed on March 10, 2006 are summarized below. Please note that the value of 3σ resistance for Comparative Example 1 was corrected into 26.0 in the previous Response, as supported by the declaration under 37CFR§ 1.132 filed on March 10, 2006.

	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Comp. Ex. 1	Comp. Ex. 2	Comp. Ex. 3	Comp. Ex. 4
Uniform appearance	good	good	good	good	good	Poor	Poor	Poor	Poor
Average P%	11.6	14.3	11.7	12.6	15.6	17.3	15.5	14.0	12.2
Average thickness	5.5	2.3	6.2	18.0	3.1	1.3	19.2	3.5	2.6
3σ P%	3.0	4.0	2.0	3.0	3.0	13.0	15.0	16.0	17.0
3σ thickness	3.0	4.0	3.0	1.5	2.0	11.0	7.0	9.0	10.0
Average resistance	50.0	75.0	53.0	27.0	80.0	100.0	25.0	60.0	78.0
3σ resistance	3.0	4.0	3.0	2.0	5.0	26.0	18.0	20.0	23.0

(iv) As argued in the previous Response, an unexpected result is found in the appearance of the circuit board material. In addition, unexpected results are found in the 3σ thickness and the 3σ resistance. The values of “ 3σ P%,” “ 3σ thickness,” and “ 3σ resistance” in Examples 1-5 were much smaller than those of Comparative Example 1-4. In the Office Action dated September 14, 2005, the Examiner states that Rice et al. do not teach or suggest the usage of nickel plating baths that contain sulfamate ions, but relies on Kazonovtse et al., who disclose nickel sulfamate concentration of 120-140g/l. However, none of the cited references teaches

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using nickel sulfamate at the claimed concentration. The improvement of the features in the claimed range of the concentration is unexpected. That is, with respect to the appearance, 3σ P%, 3σ thickness and 3σ resistance, the products prepared by the claimed method were superior to those prepared by the concentration taught by Kazonovtse et al. Because the claimed range exhibits unexpected results, the method recited in claim 20 is not obvious over Rice et al. in view of Kazonovtse et al. Reconsideration of the rejection is respectfully requested.

(3) Claims 27, 29 and 31 were rejected under 35 U.S.C. §102(b) as being anticipated by Rice et al. (U.S. Patent No. 4,888,574). Claim 30 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rice et al. (U.S. Patent No. 4,888,574) in view of Gales et al. (WO 01/63016).

Claims 27 and 29-31 have been cancelled in this Response. Thus, the rejections are made moot.

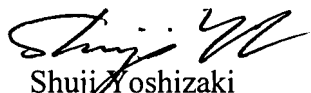
(4) In view of the aforementioned amendments and accompanying remarks, Applicants submit that that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

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If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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Petition for Extension of Time